

Remarks

Drawings

The Examiner objected to the drawings because reference characters "37" and "38" have both been used to designate a loaded resist transfer pad. It is respectfully submitted that this error in Fig. 3 has already been corrected in the filing for the RCE on 5-7-2007. A replacement sheet including figures 3 and 4 was submitted with the RCE and was subsequently logged into the PAIR system. The only change to figure 3 was that the reference numeral "37" has been changed to "38" to correspond to the specification's reference to the "loaded resist transfer pad 38" at page 5, line 11, inter alia.

In addition, the RCE filing also corrected the specification's erroneous reference to "37" where "38" should have been used. As noted in the previous filing, the specification as filed generally refers to the "cover-tape 37," but in one place "37" is erroneously used for the loaded resist transfer pad. The previous amendment corrected this typographical error in the paragraph starting on page 5, line 1 to read as follows:

Figure 3 illustrates an embodiment of the loaded resist transfer pad 38 ~~37~~ with photoresist 34.

Therefore, the applicants respectfully request that this objection be withdrawn based on the previously filed correction of Fig. 3 and the amendment to the specification.

Section 112 First Paragraph Rejections

The Examiner rejected claims 15-22 under section 112 first paragraph. For claim 15 the Examiner argued that the specification does not disclose the size of the cover-tape nor that the cover-tape is attached to the cushion layer.

Applicants respectfully disagree, but claim 15 has been amended to clarify the claim.

In regard to the size of the cover-tape amended claim 15 recites "the cover-tape being larger in area than the photoresist transfer pad and extending beyond at least first and second edges of the photoresist transfer pad." The cover-tape 37 is shown in Fig. 4 along with the loaded resist transfer pads 38. The cover-tape is clearly shown as being substantially larger than the loaded resist transfer pads 38. The specification also states: "The loaded resist transfer pads 38 are held by a cover-tape 37 which is fed from reel 42." (p. 5, lines 18-19.) Note that plural "pads 38" are held by "a cover-tape 37" which indicates that the cover-tape is larger than a single pad as is confirmed in Fig. 4 which shows the cover-tape extending beyond two edges of the loaded resist transfer pads. In addition claim 8 as filed included "placing the loaded resist transfer pad onto a cover-tape that is larger than the loaded resist transfer pad."

The word "attached" in claim 15 has also been changed to "holding" to more closely match the exact wording used in the specification. Because it is clear from the specification that the purpose of the "loaded resist transfer pads" is to transfer the photoresist to the workpiece, applicants submit that one of skill in the art would understand that the photoresist layer is oriented toward the workpiece as shown in Fig.4. The specification states that the photoresist 34 remains on the slider surface when the resist transfer pad is removed. (See for example, p. 5, lines 26-27.)

Therefore, applicants believe the amended claim 15 is clearly supported by the specification.

For claim 16 the Examiner argued that the specification does not disclose that the cover-tape is attached to the stiffener layer. Claim 16 has been amended to recite that the cover-tape is "holding the photoresist transfer pad." For the reasons noted above applicants believe the amended claim 16 is clearly supported by the specification.

For claim 17 the Examiner argued that the specification does not support the claim's recitation of "at least two photoresist transfer pads attached to the cover-tape." The claim has been amended to recite that the pads are "held by the cover-tape." As noted above the specification states: "The loaded resist transfer pads 38 are held by a cover-tape 37 which is fed from reel 42." (p. 5, lines 18-19.) Thus, plural "pads 38" are held by "a cover-tape 37." Figure 4 shows two loaded resist transfer pads 38 and the specification states:

The loaded resist transfer pad 38 is pressed against the slider surface by roller 43 as the pallet moves on the conveyor 49. A section of cover-tape 37 is cut by prior art (not shown) and adheres to and moves with the pallet as it clears the roller 43. The pallet 41 with a section of cover-tape 37 and the loaded resist transfer pad 38 continues forward with the slider 20 and pallet 41. (p. 5 lines 19-23.)

Thus, it is clear that the two loaded resist transfer pads 38 were initially attached to the cover-tape 37 on roller 43 prior to one section of the cover-tape being "cut." For the reasons noted above applicants believe the amended claim 17 is clearly supported by the specification.

Section 103 Rejections

The Examiner rejected claims 1-3, 11-12 and 14-23 under section 103(a) as being unpatentable over Nuzzo et al. 2005/0199584. Nuzzo describes "Decal transfer microfabrication" in which a pattern is formed in a surface of a silicon-containing elastomer. The pattern is contacted with a substrate, and the pattern is bonded to the substrate. The silicon-containing elastomer may be removably

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attached to a transfer pad. (Abstract). Thus, Nuzzo is not teaching structures for applying photoresist to workpieces as applicants claim.

It is respectfully submitted that the Examiner has failed to state a prima facie case of obviousness in citing Nuzzo. For example, applicants' claim 1 includes "a transfer layer of polydimethylsiloxane with a transferable coating of photoresist on an outer surface of the transfer layer, the transferable coating of photoresist being transferable to the workpiece through physical contact." The Examiner cited to Nuzzo's paragraph 0048 for the claimed transferable coating of photoresist. But the relevant portion of 0048 is as follows:

Removable attachment may also be facilitated by a stimulus-responsive adhesive layer between the elastomer and the transfer pad. The adhesive layer can provide an irreversible attachment between the adhesive layer and the silicon-containing elastomer and between the adhesive layer and the other material, but can be made to reduce the strength of attachment to the elastomer and/or the other material. For example, a layer of adhesive material may be subjected to a change in conditions such as temperature, irradiation or electric field such that the adhesive strength is reduced. In one example, a photoresist material such as poly(methyl methacrylate), poly(.alpha.-methylstyrene), poly(norbornene-co-maleic anhydride), or phenol-formaldehyde can initially provide an adhesive bond between the materials. These materials may then be degraded by irradiation to sufficiently reduce the strength of adhesion and to allow the materials to be separated. Such photoresist-based reversible adhesion may also include the use of a photosensitizer such as a photoacid generator to improve the response time for the reduction in adhesive strength.

Neither this passage, nor any other found by applicants, in Nuzzo teaches a transferable coating of photoresist on polydimethylsiloxane as claimed. In the cited section the photoresist is not transferable from a polydimethylsiloxane transfer layer to a workpiece, but rather the photoresist is suggested for use as a degradable adhesive. Applicants respectfully submit that Nuzzo's device does

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not have a transferable coating of photoresist that is transferable to a workpiece by physical contact as applicants claim.

More specifically Nuzzo does teach using PDMS as transfer layer with a transferable coating of photoresist. Nuzzo teaches the use of PDMS as a "transfer pad," but not for applying/transferring photoresist to a workpiece. For example, in paragraph 0049 Nuzzo states: "Preferably, the transfer pad is a silicon-containing elastomer. More preferably, the transfer pad is PDMS." In Nuzzo's figures the transfer pad is "80" in Fig. 2 and "82" in Fig. 3. (See paragraph 0061.) The text does not describe and the figures do not show any of the applicants' claimed structures. For example, Nuzzo's figures show the PDMS layer 80, 82 as the top layer, i.e. there is nothing above the PDMS. In contrast, applicants' claim 1 includes "a transfer layer of polydimethylsiloxane with a transferable coating of photoresist on an outer surface ...and a cushion layer consisting of rubber under the transfer layer" Nuzzo does not show or suggest this structure. Applicants' other independent claim include similar recitations and likewise distinguish over Nuzzo.

Independent claims 15, 16 and 17 each include a cover-tape that holds at least one photoresist transfer pad. Claim 15, as noted above, includes a cover-tape holding the photoresist transfer pad with the cover-tape being larger in area than the photoresist transfer pad and extending beyond at least first and second edges of the photoresist transfer pad. For the claimed cover-tape the Examiner cited Nuzzo's "stimulus-responsive adhesion layer" again citing to paragraph 0048. The Examiner's argument appears to be that Nuzzo's adhesion layer can be interpreted to simultaneously be both applicants' claimed transferable photoresist and the cover-tape, which leads to a logical contradiction. The cover-tape and the photoresist pad with a transferable layer of photoresist cannot logically be construed to be a single element. The cover-tape holds the photoresist pad(s) and is larger than the photoresist pad, so they cannot be construed to be a single element from Nuzzo.

It is respectfully submitted that one of ordinary skill in the art would not be motivated to equate Nuzzo's adhesion layer with a "cover-tape" as claimed.

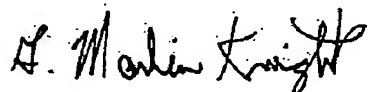
Moreover, the claimed limitation that the cover-tape is larger in area than the photoresist transfer pad and extends beyond at least first and second edges of the photoresist transfer pad was not addressed by the Examiner's rejection. There is no suggestion in Nuzzo that an adhesion layer can or should extend beyond the edges of a photoresist pad as applicants' cover-tape does.

Moreover, the difference between Nuzzo's adhesion layer and applicants' cover-tape is even clearer in claim 17 which includes two photoresist transfer pads held by the cover-tape. The fact that applicants "cover-tape" is not analogous to Nuzzo's adhesion layer is further established in dependent claim 22 which adds that the cover-tape and photoresist pads are formed into a roll. Similarly dependent claim 23 recites that the photoresist pads are sequentially disposed on the cover-tape so that unrolling the roll sequentially exposes the photoresist pads. There is no comparable teaching in Nuzzo.

Conclusion

The Examiner's section 112 rejections have been addressed along with the objection to the drawings. Applicants respectfully submit that the Examiner has failed to make a prima facie case of obviousness based on the cited Nuzzo reference. Applicants, therefore, believe that all of the claims in application are now allowable.

Respectfully submitted,



G. Marlin Knight (Reg. Number 33,409)
(customer no. 000041482)
PO Box 1320, Pioneer, CA 95666
209-295-1982

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